Monitoring Study Group Meeting Minutes

January 24, 2006
CDF Shasta-Trinity Unit Headquarters, Redding

The following people attended the MSG meeting: Dr. Michael Wopat (CGS), Dr. Cajun James (SPI), Duane Shintaku (CDF), Richard Gienger (HWC/SSRC), Dawn McGuire (DFG), Clay Brandow (CDF), Stuart Farber (Timber Products Co.), Shane Cunningham (CDF), Angela Wilson (CVRWQCB), Debra Hallis (CVRWQCB), Dr. Richard Harris (UCB), Jim Ostrowski (BOF), Dennis Hall (CDF), Jennifer Navicky (DFG), Dave Hope (NCRWQCB), Dr. Sari Sommarstrom (public), Curt Babcock (DFG), Rich Klug (Roseburg Resources Co.), Russell White (Cal Poly SLO), Jennifer Carlson (DFG), Robin Fallscheer (DFG), Stacy Stanish (DFG), Joe Croteau (DFG), Bob Cary (WM Beaty & Assoc.), Heidi Hall (SWRCB), Melenee Emanuel (SWRCB), Lois Kaufman (CDF), Dr. George Robison (HSU), and Pete Cafferata (CDF). Participating by phone were: Julia Dyer (CCRWQCB), Sue McConnell (CVRWCB), Marty Hartzell (CVRWQCB), Anthony Toto (CVRWQCB), and Thom Sutfin (CDF-SDSF). **[Note: action items are shown in bold print]**.

We began the meeting with general monitoring-related announcements:

- The 24th Annual Salmonid Restoration Conference will be held in Santa Barbara on February 22-25, 2006. For more information, see: http://www.calsalmon.org/conference/2006/index.htm.
- The CLFA Spring Workshop on "California Law and Forestry" will be held on March 2, 2006 in Sacramento. For more information, see: http://www.clfa.org.
- The 5th National Monitoring Conference titled "Monitoring Networks: Connecting for Clean Water" will be held May 7-11, 2006 in San Jose. The sponsor is the National Water Quality Monitoring Council and more information can be found at: http://water.usgs.gov/wicp/acwi/monitoring/conference/2006/.
- Jim Ostrowski stated that the NorCal Society of American Foresters Winter Meeting will be held in Reno on January 27-28, 2006, with the topic being "Restoration Forestry" (see: http://www.norcalsaf.org/)
- Richard Harris announced that the follow-up paper to the November 1, 2005 workshop on turbidity monitoring exists as a draft, with completion anticipated by spring 2006. Email Richard to receive an electronic copy of the draft paper for review at: rrharris@nature.berkeley.edu.
- Michael Wopat stated that an excellent document titled "Debris Control Structures--Evaluation and Countermeasures" (October 2005) is available from the Federal Highway Administration (Hydraulic Engineering Circular No. 9). To download the document, go to: http://www.fhwa.dot.gov/engineering/hydraulics/pubs/04016/hec09.pdf.
- Michael Wopat also announced that there is a river basin online bulletin board available at: http://joewheaton.org.uk/bb/. This is an open forum for researchers, professionals and advocates working with rivers.
- Richard Gienger stated that four DVDs documenting the workshop titled "Future Forests on the North Coast: Financing Forestland Acquisition for Sustainable Forest Management" held on October 27, 2005 in Eureka are available. There were nine presentations given on sustainable forestry. PowerPoint presentations from the workshop are available at: http://www.newforestry.org/council/FutureForests.htm.
- Sari Sommarstrom announced that a Five Counties Fish Passage Design and Engineering Workshop will be held in Ukiah on March 7-9, 2006. For more information, see: http://www.5counties.org/.

Central Valley RWQCB Waiver Monitoring Program

Jim Pedri, Assistant Executive Officer of the CVRWQCB, provided the MSG with a PowerPoint presentation titled "Conditional Waiver of Waste Discharge Requirements for Timber Harvest Activities." This presentation was provided at workshops held in Redding and Sacramento in the latter part of 2005. Jim began by providing a brief history of the waiver process. Amendments to California Water Code section 13269 required the termination of existing waivers of Waste Discharge Requirements (WDRs) on timberlands. Previously, WDRs were waived if a plan proponent had an approved THP (from 1975 through 2002). In response to the new law, the Regional Water Boards have adopted new Region-specific conditional waivers of WDRs or general WDRs for silvicultural activities. The first Central Valley Region (CVR) waiver was adopted in January 2003, and was extended in January 2005. Lawsuits were filed against the waiver in 2004, but the court ruling was in favor of the CVRWQCB. The current waiver document titled "*Conditional Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities" (with Attachments A, B and Monitoring and Reporting Program)* is posted at: http://www.swrcb.ca.gov/rwqcb5/adopted_orders/Waivers/R5-2005-0052.pdf

Timber harvesting in the CVR was briefly described by Mr. Pedri. The primary pollutants are sediment, temperature, and pesticides, with sediment being the dominant pollutant. There is only one 303(d) listed waterbody in the CVR with timber harvesting. Little sediment data exists for mountain streams in this region, but the SNEP (1996) report describes the Sierra Nevada as overall having a relatively low sediment yield compared to other parts of California. Currently, the number of THPs is down, but acreage per THP is up. The present CVR waiver program utilizes 4.5 personnel years (PYs), and will be augmented by an additional 4.4 PYs in the near future. Approximately 30% of the THPs in the CVR were field reviewed in 2004, but this will increase with the augmented staffing. Two years of experience with waivers have shown them to be effective in reducing water quality impacts, since they provide a "proactive" approach. Several examples of waiver THP field modifications required in past plans were provided (e.g., increased soil stabilization requirements, increased buffers). Jim stressed that waiver conditions are enforceable and that waivers can be terminated by the CVR Executive Officer.

Timber harvest monitoring must be included as part of CVR waivers, unless there is no significant threat to water quality. Monitoring must be designed to verify waiver conditions, and can be conducted with individual, group, or watershed-based efforts. The CVR recognized that sediment discharges are highly variable in time and space, diffuse (i.e., non-point source), and may result from natural and non-timber sources. Additionally, access for sampling sediment and turbidity is often difficult or impossible. The development of the waiver monitoring requirement considered feasibility of access, and recognized existing monitoring efforts by the USFS, CDF, and the timber industry. The waiver-required monitoring language and methods are largely based on the MOU Monitoring Workgroup (2005) document and discussions. Definitions for the different types of monitoring (i.e., agency, implementation, effectiveness, forensic, compliance, and assessment/trends) were taken directly from the MOU Monitoring Workgroup's final document. For the CVR, waivers require varying levels of monitoring based upon the potential threat to water quality due to the physical setting, type of activities proposed, and current water quality conditions. For example, low risk plans require only implementation monitoring, but higher risk plans are required to have implementation, effectiveness and forensic monitoring. Jim stressed that implementation monitoring is considered the most important, since a detailed visual

inspection of the harvested area prior to the rainy season is able to detect the status of water quality measures installed as part of the plan (before October 15th). Effectiveness monitoring is conducted after the rainy season (between March 15th and June 15th), and forensic monitoring is done during the rainy season to see if significant sediment discharges are occurring (2 times during rainfall events, and following observation of significant sediment discharge). Water quality compliance monitoring is patterned after the PALCO THP 520 (Hole in the Headwaters) SWRCB decision (i.e., sample above and below timber activity; if elevated turbidity is observed, conduct a field investigation to determine sources). Compliance monitoring may be required if there are widespread failures of Forest Practice Rules or management measures related to water quality. Trend monitoring can be required if there are recurring violations of sediment, turbidity, temperature, or pesticide water quality control plan objectives.

Jim stated that waiver fees, if implemented, would be based on a schedule adopted by the SWRCB, but that such adoption is unlikely in the near future. Jim and Angela Wilson briefly summarized specific information included in Attachments A and B. Conditions for waivers granted for Exemption or Emergency notices are listed in Attachment A, as well as the monitoring requirements. Some changes have been made in the most recent revision, including reduced monitoring requirements for Category 1 (low impact THPs, NTMPs, Exemption or Emergency notices). The new waiver language requires notice of operations to be given within 15 days for Exemptions and Emergencies and 30 days for THPs and NTMPs. Attachment B was developed for the waiver monitoring requirement, and includes sections describing monitoring authorities, types of monitoring, monitoring criteria, and monitoring conditions (conditions for each monitoring type and reporting requirements). There is also a requirement for watercourse assessments for “high harvest” watersheds.

Jim and Angela also summarized information in Order No. R5-2005-0052, which describes required implementation, forensic and effectiveness monitoring and reporting. This order lists specific monitoring items to be completed, and includes information on inspection plans, site inspections, inspection schedules, and monitoring reporting. Violation reporting is to occur by phone within 48 hours after detection of violation of water quality control plan requirements, failure of management measures, new landslides, etc. A written report is to be submitted within 14 days following detection.

Following the formal presentation, there was discussion on the CVR waiver monitoring program. Jim stated that the program was started in April 2005, so little monitoring information has been received to date (some recent forensic monitoring data has been received). Considerable information is anticipated by July 2006. Richard Gienger stated that this is a complex process that will be difficult for small landowners to implement correctly, and that a robust training and education program is required for small operators. **He suggested that a workshop discussing self-monitoring methods for small landowners would be helpful, as would more information on the CVR website**. Angela Wilson agreed, saying that the main hurdle has been to get information on the requirements to small landowners. **She is assembling a Frequently Asked Questions (FAQ) document to help educate landowners and is soliciting questions or concerns to add to the document.** It was also stated that the waiver is not transferable to new landowners when forest property is sold, but could be obtained if the new owners agree to the waiver conditions

Update on the Judd Creek MSG Cooperative Instream Monitoring Project

Cajun James presented detailed information on how the Judd Creek watershed responded to the large storm events of December 2005. The Judd Creek watershed is mostly owned by SPI and located in Tehama County at an elevation of about 3500 feet. An MSG cooperative instream monitoring project is being conducted in this watershed. Fiberglass Parshall flumes were installed at the five monitoring stations in Judd Creek during the fall of last year to allow accurate water discharge measurement after consultation with Rand Eads, watershed consultant and USFS-PSW, Hydrologic Instrumentation Specialist (retired). Three to five foot (at the throat) width flumes were installed. Cajun discussed how larger flumes would have been less accurate for summer low flow measurement, but would provide greater capacity for large return interval storm events. The flumes were flowing at a depth of 3 feet (capacity) on December 28th at peak discharge. Wood was transported through the flumes without damage. Approximately 30 inches of precipitation fell in a 10 day period, generating maximum turbidity levels of 700 NTUs. Flow and turbidity data sets were displayed following a brief PowerPoint presentation that provided general information on the Judd Creek watershed study. Turbidity data from all five stations showed similar responses to the storm events experienced in November and December, and turbidity spikes corresponded well with discharge peaks. A maximum discharge of 120 cfs was documented at the lower stations.

Cajun also showed several photos displaying watercourse crossings installed as part of SPI's Howard Flat THP (THP No. 2-04-180 TEH), which was completed in the summer of 2005. The Howard Creek watershed is located a relatively short distance to the south of Judd Creek and received similar rainfall to that documented in Judd Creek. Due to the high discharges, the Howard Creek channel shifted and scoured out the footings for a new pipe arch crossing and the abutments for a bridge. As part of the monitoring requirements associated with the CVRWQCB waiver for this THP (see the summary for the agenda item above), photos were taken of the channel erosion and sent to the Regional Water Board staff in Redding. There was discussion by the group on how it is important to design watercourse crossings so that pipe arches are not used where there are highly mobile beds and footings are not installed on fill material. **Cajun suggested that additional crossing workshops, focusing on bridge and culvert construction techniques, would be beneficial for informing the RPF/LTO community about the lessons learned at Howard Creek and other locations. Angela Wilson said that she supports the idea of finding ways to disseminate information on proper crossing design to RPFs and LTOs, including possibly developing a new guidance document for RPFs and LTOs. Sari Sommarstrom stated that it is important to recognize what has been learned to date regarding roads and crossings from the Five Counties (5C) Salmonid Conservation Program** (http://www.5counties.org/). Several reports documenting past 5C work are available on their website, including the 5C Road Maintenance Manual (http://www.5counties.org/Projects/FinalGeneralProjectPages/RoadsManual800.htm) and Lancaster and Pérez's (2001) Five Counties Road Erosion Inventory Final Report (http://www.5counties.org/PDF_Files/DIRTFinalSB271Report.pdf).

Modified Completion Report Monitoring Program Final Report

Clay Brandow presented a detailed PowerPoint presentation on the Modified Completion Report (MCR) monitoring program draft final report (the PowerPoint is posted at: http://www.bof.fire.ca.gov/pdfs/MCRMonitoring_Draft%20Analysis1_2006.pdf). **The MCR**

review draft report will be posted within one week on the MSG's Supported Reports webpage (http://www.bof.fire.ca.gov/board/msg_supportedreports.asp).

MCR monitoring data was collected from 2001 through 2004 on a random 12.5% sample of completed THPs by CDF Forest Practice Inspectors. A total of 281 THPs were sampled, with 52% from the Coast District, 27% from the Northern District, and 21% from the Southern District. Based on earlier monitoring results from the Hillslope Monitoring Program (HMP), three areas of THPs were evaluated: WLPZs, roads, and watercourse crossings.

For WLPZs, 187 of the 281 THPs had Class I or II zones monitored as part of the MCR work. A randomly located 200 foot WLPZ segment was chosen and sighting tube readings were taken with a systematic 50 point grid pattern to measure total canopy. Class I WLPZ total canopy was 84%, 69%, and 71% for the Coast, Northern, and Southern Districts, respectively. Class II total canopy was very similar, with 84%, 67%, and 73% found for the Coast, Northern, and Southern Districts, respectively. Separate estimates for WLPZs with and without current plan harvesting showed that little change in total canopy resulted from recent selective harvest. The post-harvest total canopy percentages are similar to those reported in the earlier HMP (http://www.bof.fire.ca.gov/pdfs/ComboDocument_8_.pdf). Only 19 WLPZ segments sampled had one or more erosion features recorded, and of these, just two had erosion features related to current timber operations.

Regarding roads, 244 randomly selected 1,000 foot road segments (~46 mi) were sampled and rated for implementation. A total of 1,991 road features (e.g., drainage structures) were rated for FPR implementation. Eighty-three departures were recorded, and these departures tended to be clustered (i.e., 2% of the road segments accounted for 40% of the departures). For all three districts, road feature implementation was: 76% acceptable, 14% marginally acceptable, 4% departure, and 6% exceed rule requirement. Road rule departures were mostly related to drainage requirements. Specifically, four rules accounted for 95% of the departures: waterbreak spacing [49%], drainage ditches maintained/berms removed [17%], waterbreak discharge into cover [16%], and waterbreaks constructed to appropriate depth [13%]. In addition, 130 of the 244 road segments were rated for effectiveness. A total of 1,147 road-related features were rated for effectiveness, and 109 had erosion documented (10%), 36 had sediment transport (3.1%), and 9 had sediment transport to the channel (~1%). Departures from FPR requirements were much more likely to result in erosion, sediment transport, and transport to stream channels. For the 55 road features rated has having FPR departures, 53% had erosion, 35% had sediment transport, and 11% had sediment delivery. In contrast, for the road features with acceptable FPR implementation, 5% had erosion, 1% had sediment transport, and 1% had transport to the channel.

A total of 357 watercourse crossings were rated for FPR implementation. Approximately 62% were culverts, 25% fords, 11% removed or abandoned crossings, and 2% bridges. Almost 60% of the crossings were in Class III watercourses and close to 75% were associated with seasonal roads. Ten FPR requirements (out of 30 rated) were found to have departure rates of 4% or higher. Five of these ten rules relate to removed or abandoned crossings. The rule with the highest departure rate (7.4%) requires fills to be excavated to form a channel that is similar to the natural watercourse grade and orientation and is wider than the natural channel. For crossings with implementation evaluations, 64% had all the crossing rules rated as meeting or exceeding the FPRs; 19% had one or more marginally acceptable ratings, but no departures; and 17% had one or more departure ratings. This compares favorably with the earlier HMP results, which had 19.5 of the crossings with one or more major departures.

Twenty-seven features were rated for crossing effectiveness. Major problems were found a total of 76 times on 53 crossings, from a total of 289 crossings evaluated for effectiveness (i.e., 18% had significant effectiveness problems). For new and existing culverts, 10.6% had a major diversion problem, 5.5% had a major plugging concern, and 4.0% had a major cutoff drainage structure problem. The percentage of major and minor problems was smaller for new culverts installed as part of the current THP when compared to existing culverts.

Clay offered the following two conclusions from the MCR work: (1) the rate of compliance with FPRs designed to protect water quality and aquatic habitat is generally high, and (2) the FPRs are highly effective in preventing erosion, sedimentation and sediment transport to channels when properly implemented. **A Phase II MCR monitoring program is planned to be implemented in 2006, again using CDF Forest Practice Inspectors to collect monitoring data, but this time field work will be coordinated and overseen by the new CDF Monitoring Coordinators. Proposed changes for the program include: (1) a reduced WLPZ sample size, (2) a revised, simplified road form and evaluation method, focusing on drainage and discharge, and (3) a revised crossing form that clarifies which FPRs are to be rated for rule implementation. Richard Gienger suggested that future work should include digital photos of problem sites. Clay will make a MCR final report presentation to the BOF in the near future.**

Update on the Little Creek MSG Cooperative Instream Monitoring Project

Russ White, graduate student at Cal Poly, San Luis Obispo, gave a brief presentation on the Little Creek watershed study located on Swanton Pacific Ranch in the Santa Cruz Mountains (see: http://ari.calstate.edu/research/pdf/00-3-011/FinalReport-00-3-011.pdf). This is the newest MSG cooperative instream monitoring project, with a completed three year contract between CDF and CPSUF currently being circulated for signatures. There are four continuously recording monitoring stations in the Little Creek watershed, a tributary of Scotts Creek. The project utilizes a combination of paired watershed and upstream/downstream study designs, and water quality data has been collected since 2001. This winter is expected to be the last winter of pre-project data collection, with logging to begin in the summer of 2006. Harvesting in second-growth redwood stands will use single tree selection and small group selection silviculture. A LIDAR flight exists and has allowed accurate mapping of roads and skid trails in the basin. Channel condition monitoring is also completed each summer to complement suspended sediment and turbidity monitoring at the four monitoring stations. Approximately 20 inches of rainfall fell in the latter half of December 2005.

Reports on Ongoing Projects

Due to the length of the presentations described above, only very brief updates were provided for the agenda items dealing with the IMMP, MSG Strategic Plan, and reference watersheds. **These agenda items will be covered at the next MSG meeting.**

New and Unfinished Business

Richard Gienger reiterated that he believes a workshop targeted for small nonindustrial landowners for education regarding implementation, effectiveness and forensic monitoring is very important, and could possibly be sponsored by the BOF and the Buckeye Conservancy.

Next MSG Meeting Date

The next MSG meeting date was set for March 14, but a meeting location has yet to be selected. When this information is available, it will be emailed to the group along with the meeting agenda.